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The predictive influence of family, teachers, and peers on affective, cognitive, and behavioral school engagement in primary and secondary school students

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ABSTRACT

School engagement has been proven to be a crucial factor in the development of a successful educational trajectory. It is a multidimensional concept encompassing affective, cognitive, and behavioral aspects, all of which are influenced by the social support students receive from the contexts in which they grow, with the most significant being family, teachers, and peers. The primary objective of this study is to analyze the impact of family, teacher, and peer support on students' levels of affective, cognitive, and behavioral school engagement in the subsequent year while also examining variations between primary and secondary school students. This study involved 927 elementary and secondary school students who were assessed over two consecutive years. The results of the multigroup structural equation analysis revealed that family, teacher, and peer support levels had distinct predictive capabilities on different components of school engagement at both educational levels. Specifically, family support predicted levels of cognitive engagement, while peer support predicted levels of affective engagement. Furthermore, for elementary school students, teacher support emerged as a predictor of behavioral engagement, while for secondary students, it was identified as a predictor of cognitive and affective engagement. This study highlights how important family, teacher, and peer support are for shaping different aspects of school engagement. By understanding these distinct influences, educators and families can work together to create supportive environments that help students thrive academically and emotionally.

Capacidad predictiva de la influencia de la familia, el profesorado y los pares sobre el compromiso escolar emocional, cognitivo y conductual en estudiantes de educación primaria y secundaria

Palabras clave:
Compromiso escolar
Factores contextuales
Familia
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Cognitivo
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RESUMEN

El compromiso escolar ha demostrado ser un factor crucial para el desarrollo de trayectorias educativas exitosas. Se trata de un constructo multidimensional que incluye aspectos afectivos, cognitivos y conductuales, que se ve influenciado por los contextos en los que los y las estudiantes se desarrollan, siendo los más relevantes la familia, el profesorado y los pares. El objetivo principal de este trabajo es analizar la influencia del apoyo de la familia, el profesorado y los pares que los y las estudiantes tienen sobre los niveles de compromiso escolar afectivo, cognitivo y conductual que presentan al siguiente curso, así como las variaciones entre el alumnado de educación primaria y secundaria. En este estudio participaron 927

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estudiantes de educación primaria y secundaria, evaluados en dos cursos consecutivos. Los resultados de los análisis de ecuaciones estructurales multigrupo mostraron que el apoyo recibido de la familia, el profesorado y los pares poseen capacidad predictiva diferenciada sobre los componentes del compromiso escolar en ambos niveles educativos. Concretamente, la familia predijo los niveles de compromiso cognitivo y los pares los niveles de compromiso emocional. Además, en el caso de los y las estudiantes de educación primaria, el apoyo recibido por el profesorado predijo el compromiso conductual y en el caso de los y las estudiantes de secundaria el compromiso afectivo y cognitivo. Este estudio destaca la importancia del apoyo de familia, profesorado y pares para moldear diferentes aspectos del compromiso escolar. Al comprender estas influencias distintas, educadores y familias pueden trabajar juntos para crear entornos de apoyo que ayuden a los y las estudiantes a prosperar académica y emocionalmente.

Introduction

School engagement refers to the level of participation, interest, and investment that students demonstrate in their educational experience. It encompasses a range of behaviors, attitudes, and emotional connections that students have with their school and learning processes (Saracostti et al., 2019). Engaged students view learning as meaningful, are motivated, and actively participate in their education and future (Saracostti et al., 2021). Therefore, it holds significant importance for students' academic achievement (Lei et al., 2018) and serves as a protective factor against school dropout (Archambault et al., 2022; Tarabini et al., 2018).

Regarding the conceptualization of this construct, although there are different definitions (for a review see Alrashidi et al., 2016; Martins et al., 2022; Sinatra et al., 2015), the literature review highlights two basic approaches. On one hand, some authors prefer to use the term "student engagement", focusing on the student and their internal experience (Christenson et al., 2012). On the other hand, other authors prefer to refer to "school engagement", where the emphasis is not solely on the student but on contextual variables as key elements for conceptualization (Fredricks et al., 2004). However, these terms are usually used interchangeably, and there is consensus in considering school engagement as a multidimensional construct that encompasses affective, behavioral, and cognitive aspects (Martins et al., 2022; Sinatra et al., 2015). The conceptualization that receives more support from the scientific community is the one proposed by Fredricks et al. (2004), who define it as a multidimensional construct composed of interrelated behavioral, affective, and cognitive components. Following Lara et al. (2018) and Saracostti et al. (2022), these components would be conceptualized as follows. Behavioral engagement refers to students' participation and involvement in school activities, including the most observable aspects of school engagement, such as class attendance and adherence to rules. Affective engagement is related to the emotional response to the learning process and to the school, which implies a sense of belonging to the school. Finally, cognitive engagement involves personal investment in the learning process itself, reflecting an interest in utilizing various learning strategies and making an effort to develop learning skills.

School engagement is not a static characteristic of students but, rather, it largely depends on their interaction with their environment (Korpershoek et al., 2020), aligning with the principles of the bioecological model of development (Bronfenbrenner & Morris, 2006). The environments closest to students, where they have the most interaction, such as their home and educational institution, are considered pivotal factors in fostering school engagement (Martins et al., 2022). Research findings suggest that the primary contextual influences on the development of school engagement are family, teachers, and peers (Ansong et al., 2017; Navarro et al., 2021). Most of the available studies assess both the support students receive from these contexts and their level of school engagement simultaneously, providing valuable insights into the relationship between the support received and school engagement.

In general, the findings from cross-sectional research consistently emphasize the significance of receiving support from these three contexts in shaping the development of school engagement (Ansong et al., 2017; de Toro et al., 2023; Martins et al., 2022; Miranda-Zapata et al., 2018; Miranda-Zapata et al., 2021; Navarro et al., 2021; Olana & Tefera, 2022).

In general, previous studies suggest a decline in school engagement throughout students' educational trajectories (Archambault & Dupéré, 2017; Skinner et al., 2008; Wigfield et al., 2015; Winter et al., 2022). However, when differentiating between dimensions, some studies do not report differences in the behavioral component (Conner, 2016). This decline is particularly noticeable during the transition from primary to secondary education. It is primarily attributed to changes in the social contexts experienced by adolescents upon entering secondary education, which involve shifts in the support received from family, peers, and teachers (Wang & Holcombe, 2010). Nevertheless, the results of some prior studies indicate that this general trend may vary when considering other factors, such as the specific contexts in which students develop. This underscores the need for further research in this area (for a comprehensive review, see Salmela-Aro et al., 2021).

The family plays a fundamental role as a primary contextual factor in ensuring a successful educational trajectory at all levels of education (Benner et al., 2016; Lara & Saracostti, 2019). Although a general trend toward a reduction in this influence throughout schooling has been highlighted, rather than decreasing, the key is that the form in which this support is presented changes to match the demands of developmental stages (Hoover-Dempsey & Sandler, 1995), thus, the need for family involvement decreases throughout schooling (Otani, 2020) to give way to more indirect forms. The support from family can change throughout the life cycle. For example, with younger students, it may involve reading with them, while for adolescents, it can be understood as discussing school dynamics with them. Specifically, previous studies have provided empirical support for the positive relationship between the family context and school engagement (for a comprehensive overview, see Yang et al., 2023).

While peer support has been recognized as a significant factor contributing to academic success across all educational levels, its impact becomes particularly pronounced during adolescence, coinciding with the secondary education stage (Estell & Perdue, 2013; Lam et al., 2014). Furthermore, several studies emphasize the critical role of peer support in facilitating a successful transition from primary to secondary (Virtanen et al., 2019). However, it is important to note that not all studies find a consistent relationship between peer support and school engagement (Gutiérrez et al., 2017).

About teachers, several studies, and reviews on the subject in fact highlight that this is the component with the strongest

relationship with school engagement (Carvalho & Veiga, 2023; Havik & Westergård, 2020; Fernández-Zabala et al., 2016; Martin & Collie, 2019; Quin, 2017). In the study by Miranda-Zapata et al. (2021), where they analyze, among other data, the influence of contextual factors on school engagement in five countries, they precisely highlight that an important factor was the teacher factor, which consistently presented significant relationships with the three components (cognitive, affective, and behavioral) of school engagement in the five countries. In terms of its variation according to educational level, the emotional support that teachers provide to their students tends to be lower in secondary education than in primary education (Zimmer-Gembeck et al. 2006); However, their relationship with school engagement continues to be significant at both levels.

Although there is sufficient evidence in scientific literature that supports the positive influence of family, teacher, and peer support on school engagement, specifically on which components of school engagement have greater weight in each of these contexts is an area where research is needed, mostly because many studies analyze school engagement as a single construct without differentiating by dimensions. Moreover, not all research considers all the dimensions of school engagement. For example, school engagement reviews conducted by Martins et al. (2022) in primary education and Salmela-Aro et al. (2021) with adolescents emphasize that much of the research focuses on affective and behavioral engagement, not considering cognitive engagement. While specifically focused on the variation in the relationship between contextual factors and school engagement as a function of educational level the evidence is scarce, as research tends to focus specifically on one level without establishing comparisons between different levels, even more it is about the different dimensions that compose it (Yang et al., 2018). Identifying factors within these contexts that can be modified to promote specific components of school engagement would enable more effective interventions to be developed. The available studies report some evidence regarding the influence of each of these contexts over the different school engagement components.

Starting with family support, it seems that studies point to the most consistent relationship with cognitive engagement (Miranda-Zapata et al., 2018). Regarding the relationship of peer context on the specific components of school engagement, a more consistent result lies in the positive relationship with affective engagement (Carvalho & Veiga, 2023; Estell & Perdue, 2013; Liu et al., 2023; Miranda-Zapata et al., 2018). The relationship of peer support with the cognitive and behavioral components, until now at least, is not so clear from the available results. Regarding the relationship with cognitive engagement, several studies have found weak or no association between peer support and cognitive engagement. In fact, for example, the studies by Fernández-Lasarte et al. (2019) and Fernández-Zabala et al. (2016) even report a negative relationship between peer support and cognitive engagement. Regarding the influence on behavioral engagement, there are contradictory results, for example, some studies report that there is no relationship (Estell & Perdue, 2013). Teacher support, as aforementioned, is one of the most relevant factors in school engagement in general, with positive relationships also found with all its components, specifically, several studies emphasize that the strongest association occurs with affective engagement (Fernández-Lasarte et al., 2019; Miranda-Zapata et al., 2018).

The current body of research remains incomplete, as it frequently fails to account for the simultaneous influence of family, peers, and teacher support on the three dimensions of school engagement—cognitive, affective, and behavioral. Identifying the specific sources of social support that most effectively contribute to each of these dimensions is crucial for promoting school engagement and achieving its positive outcomes (Martinot et al., 2022). Additionally, there is a significant lack of robust scientific evidence regarding the long-term predictive capacity of social support on school engagement. Longitudinal studies are essential for understanding how school engagement evolves over time and how contextual factors shape its development. In the Latin American context, such longitudinal research on the predictive power of social support is particularly scarce (Salmela-Aro et al., 2021). One notable study by Geng et al. (2020) examines the predictive roles of teacher and peer support on the three components of school engagement over three consecutive years in secondary students. The study reveals that teacher support predicts cognitive engagement from one year to the next, while peer support influences engagement over the subsequent two years. Saracostti et al. (2024) explore the transition of secondary students from low to high levels of school engagement, concluding that adults—particularly family members and teachers—exert a stronger influence on this transition than peers.

The present study

Based on the above, the main objective of this study is to analyze the influence of family, teacher, and peer support that students have on the levels of affective, cognitive, and behavioral school engagement that they present in the following course (objective 1). The hypothesis related to this objective (H1) is as follows: tt is expected that family, teacher, and peer support will positively influence all three components of school engagement (affective, cognitive, and behavioral). This study also analyzes whether there are variations in this relationship depending on whether they are in primary or secondary education (objective 2). The hypothesis related to this objective (H2) is: family, teacher, and peer support will influence all three components of school engagement at both primary and secondary levels.

Method

Participants

The study involved 927 students from primary ($N = 490$) and secondary education ($N = 437$), aged between 8 and 18 years ($M = 13.48$, $SD = 2.19$), comprising 404 boys (43.6%) and 523 girls (56.4%). All participants were assessed in two consecutive grades of school, in the years 2021 and 2022. In the year 2021, students in 5th primary grades between the ages of 8 and 13 years ($M = 11.07$, $SD = 0.55$) and 1 st secondary grades between the ages of 13 and 17 years ($M = 15.22$, $SD = 0.63$) were evaluated, and in the year 2022 the same students were evaluated when they were in 6th primary grades between the ages of 9 and 14 ($M = 11.99$, $SD = 0.53$) and 2nd secondary grades between the ages of 14 and 18 ($M = 16.11$, $SD = 0.62$). The students belonged to educational establishments in the Metropolitan and O'Higgins regions of Chile.

Instruments

The *School Engagement Questionnaire* (Lara et al., 2022). It is a self-report instrument composed of 29 items measuring the three dimensions of school engagement: *affective* (10 items, for example "I feel like I am part of the school"), *cognitive* (12 items, for example, "Before an exam, I plan how to study the subject"), and *behavioral* (7 items, for example, "I leave the classroom without asking permission"), with a Likert-type response scale, from 1 = never or rarely to 5 = always or almost always. It presents two versions, one for primary and one for secondary students, but both versions present the same factorial structure of three correlated factors (affective, behavioral, and cognitive school engagement), with similar items but adapted to the developmental stage of the students targeted.

In the present study, one item from the behavioral dimension (Ï behave well in class (face-to-face or online)¨) was removed from the analysis, as the initial goodness of fit indexes from the confirmatory factor analysis (CFA) indicated a poor fit to the data (RMSEA = .075, CFI = .854, TLI = .843) for the secondary student sample, and modification indices (MI > 370) suggested changing the item to one of the other factors. After removing the item, the model's goodness of fit indexes improved to a good fit (RMSEA = .049, CFI = .940, TLI = .934). This, along with the suggestion made by Miranda-Zapata et al. (2018) to test the performance of this item, led us to compare the model's goodness of fit indexes of the CFA by removing this item in the primary student sample. The results showed a better fit when the item was removed, improving from RMSEA = .058, CFI = .914, TLI = .907 to RMSEA = .049, CFI = .940, TLI = .934. This constitutes evidence in favor of construct validity.

The *Contextual factors Questionnaire* (Lara et al., 2022). Consists of an instrument composed of 18 items that determine the support received by the three main contexts: *family* (3 items, for example "When I have a problem, I get help from my family"), *teachers* (8 items, for example "Teachers encourage me to do an assignment again if I make a mistake") and *peers* (7 items, for example "My classmates support me and care about me"), with a Likert-type response scale, from 1 = never or rarely to 5 = always or almost always. It presents two versions, one for primary and one for secondary students, but both versions present the same factorial structure of three correlated factors (family, teachers, and peers), with similar items but adapted to the developmental stage of the targeted students.

Procedure

This study was approved by the Ethics Committee of the Universidad de Valparaíso. Before data collection, permissions were obtained from the educational centers where the data were collected, as well as the informed consent signed by the legal representatives of the participants, and the consent of the students themselves. The confidentiality of the responses was assured by assigning a code to each participant. All participating students were enrolled in nine public schools classified as vulnerable based on the School Vulnerability Index, which is calculated annually by the National School Aid and Scholarship Board. This index considers factors such as family socioeconomic context, access to healthcare, housing quality, and parental educational level (JUNAEB, 2005). Schools were selected by convenience.

Data collection occurred at two points in time: in 2021 and one year later in 2022. In 2021, participants completed questionnaires assessing Contextual Factors, while in 2022, they completed questionnaires assessing School Engagement. Given that the data collection process began during the period of remote education brought about by the Covid-19 pandemic, and considering the uncertainties of the evolving situation, it was decided to use the instruments adapted and validated for this context in Chile by Lara et al. (2022).

Both sets of questionnaires were administered through a computer platform developed for data collection (Saracostti et al., 2022). The assessments took place within the participants' schools, during regular school hours, with the assistance of a member of the research team. The completion of each questionnaire took approximately 30 minutes. To reduce Common Method Variance (CMV), the instructions for completing the questionnaires were clearly developed and communicated to the students. They were informed that there were no correct or incorrect answers and that all responses would remain anonymous.

Data analysis

Descriptive analyses of the sample were conducted using IBM Statistics SPSS v.23. To assess the impact of contextual factors on school engagement, a multigroup structural equation model was specified using the Mplus program. The degree of curricular advancement variable was employed as the multigroup variable. The analysis utilized the WLSMV estimator (Weighted Least Squares adjusted for Mean and Variance) on the polychoric correlation matrix. The comparison of parameters was determined to establish the statistical significance of differences through the MODEL CONSTRAINT command. To assess the model's fit to data, the study considered several goodness-of-fit indices, including RMSEA, CFI, and TLI. A good fit was determined by RMSEA values below .06, with values up to .08 considered acceptable. Regarding CFI and TLI, values equal to or greater than .95 were considered indicative of a good fit, while values between .90 and .949 were considered acceptable, following the criteria established by Hu and Bentler (1999). Effect sizes were calculated following the criteria established by Cohen (1992), which refer to the 'r' family of effect sizes, including regression values. According to these criteria, small effects are indicated by values ranging from .1 to .29, medium effects fall within the range of .3 to .49, large effects are in the range of .5 to .69, and very large effects are defined as values greater than or equal to .7.

Using Mplus 7.11, Confirmatory Factor Analyses (CFA) were conducted to obtain evidence in favour of construct validity and to use the factor loadings to calculate reliability of scales, Average Variance Extracted (AVE), and correlations between factors. To identify the effect of Common Method Variance (CMV), we used Harman's single-factor test (Fuller et al., 2016), comparing the fit of a one-factor model with the tri-dimensional model of each scale. If the fit of the one-factor model is similar to that of the tri-dimensional model, the effect of CMV is established. To obtain evidence in favour of convergent validity, we calculated the Average Variance Extracted (AVE), which indicates acceptable convergent validity if its value is equal to or greater than .50. Additionally, McDonald's Omega coefficient was calculated, with values above .70 indicating good reliability and evidence in favour of convergent validity. To obtain evidence in favour of discriminant validity, we compared the AVE with the squared correlation between factors. If the AVE is greater than the squared correlation between factors, evidence in favour of discriminant validity is established (Fornell & Larcker, 1981). Measurement invariance of the scales was tested to determine if metric invariance was achieved, allowing for multigroup structural equation modelling to analyse relationships between latent variables. Measurement invariance analysis included at least three levels (models): configural, metric, and scalar. The configural model sets all parameters of the model free, the metric model sets loadings as equal in both groups, and the scalar model sets both loadings and thresholds as equal in both groups. To establish that the configural model is achieved, the usual goodness-of-fit indices (RMSEA, CFI, and TLI) with standard rules of thumb are used. The metric and scalar models are considered achieved if the difference in CFI between the most constrained model and the less constrained model is greater than −.01 (Rensvold & Cheung, 2001). In other words, the lack of fit for constrained parameters must be minimal.

Results

The first objective of this study was to analyze the influence of family, teacher, and peer support on students' levels of affective, cognitive, and behavioral school engagement in the following academic year. The influence of these contextual factors, measured in 2021, on the dimensions of school engagement, measured in 2022,

Table 1
Items and standardized loadings for CF scale for primary and secondary school levels

Factor	Item	F Primary	F Secondary
Family	I talk to my family about what I do at school (or in online classes).	.71	.62
	My parents or guardians motivate me to work well at school (or in online classes).	.84	.91
	When I have a problem, I get help from my family.	.79	.77
Teachers	My teachers want me to learn a lot.	.71	.82
	When I have a problem, I get help from a teacher.	.79	.73
	Teachers encourage me to do an assignment again if I make a mistake.	.75	.76
	Teachers take an interest in me and help me if I have trouble doing an assignment.	.83	.86
	I get along with my teachers.	.78	.85
	Teachers care about me not only as a student but also as a person.	.80	.82
	At the school, teachers and other adults treat all students with respect.	.47	.66
	In this school, everyone's participation and opinion are valued.	.72	.80
Peers	My classmates support me and care about me.	.71	.88
	I can trust my classmates.	.73	.76
	My classmates are important to me.	.87	.88
	I get along with my classmates.	.75	.83
	I feel that I am important to my classmates.	.69	.69
	At my school, at least one classmate supports me with difficult assignments.	.67	.72
	When I do not understand something, my classmates help me to understand.	.65	.77

Note. F = Factor loading, all loadings are significant at $p < .01$.

Table 2
Items and standardized loadings for SE scale for primary and secondary school levels

Factor	Item	F Primary	F Secondary
Affective	I feel like I am part of the school.	.59	.71
	I can be myself at this school.	.61	.57
	Most of the things I learn in school are useful.	.72	.73
	Most teachers are concerned that the subject we learn is useful.	.72	.65
	I am proud to be at this school.	.74	.70
	What we do at school is very important to me.	.88	.82
	They treat me with respect in this school (face to face or online).	.65	.67
	What I learn in class is important to achieve my future goals.	.70	.76
	I feel that the school cares about me.	.64	.68
	I feel good at this school (face to face or online).	.66	.74
Cognitive	Before an exam, I plan how to study the subject.	.66	.71
	I use different resources (such as the internet or books) to search for supplementary information provided by the teacher.	.65	.62
	When I am doing an activity, I make sure to understand everything possible.	.77	.77
	After an exam, I wonder if my answers were correct.	.66	.70
	I know what study strategies and habits I must change to improve and get better grades.	.71	.61
	When I start an assignment, I think about the things I already know about the topic because that helps me understand better.	.76	.80
	When I study, I write down new words, doubts, or important ideas.	.63	.60
	For me it is important to understand the assignments and subjects well.	.87	.83
	I know how to use different techniques and strategies to do my assignments (such as planning work, highlighting main ideas, discussing in groups, learning by phone or by computer, etc.).	.74	.67
	After finishing my assignments (or online assignments), I check if they are OK.	.70	.73
	When I finish an assignment, I think about whether I have achieved the goal I had set for myself.	.70	.72
	I pay attention to the comments that teachers make about my work.	.75	.78
Behavioral	I skip classes, or I play hooky (or I do not connect to virtual classes). R	.82	.71
	I leave the classroom without asking permission (or I leave the online classes). R	.85	.90
	I am usually late for class (or I late for online classes). R	.36	.57
	Teachers have arranged to see my parents or guardians because of my bad behavior (or they have contacted my parents or guardians online). R	.71	.78
	I argue or fight with my classmates in the classroom (or during online classes). R	.59	.72
	They send me to the principal's or counselor's office because of my bad behavior (or the director or general inspector quotes me online). R	.83	.82

Note. F = Factor loading, R = Reverse item, All loadings are significant at $p < .01$.

was analyzed for both primary school students (5th grade in 2021 and 6th grade in 2022) and secondary school students (1st grade in 2021 and 2nd grade in 2022). The model demonstrated an acceptable fit to the data (RMSEA = .050, CFI = .935, TLI = .935). Items and standardized loadings for The Contextual Factor (CF) questionnaire are presented in Table 1 and for School Engagement (SE) questionnaire in Table 2.

Harman's single-factor test showed that there was no CMV, as the one-factor model had an unacceptable fit to the data at both school levels for each scale, as shown in Table 3.

Evidence in favour of convergent validity and reliability is provided in Table 4 for the primary school level. All AVE values are greater than .50, and all Omega values are greater than .70, indicating good reliability. Additionally, AVE values are greater than the squared correlations between factors, which constitutes evidence in favour of discriminant validity. Evidence in favour of convergent validity and reliability is also provided in Table 5 for the secondary school level. All AVE values are greater than .50, and all Omega values are greater than .70, indicating good reliability. Similarly, AVE values are greater than the squared correlations between

Table 3
One factor model fit for primary and secondary school levels

Scale	School level	RMSEA	CFI	TLI
CF	Primary	.142	.797	.770
	Secondary	.158	.802	.776
SE	Primary	.092	.784	.767
	Secondary	.121	.623	.593

Table 4
McDonald Omega Coefficient, Average Variance Extracted and squared correlation between factors for primary school level

Scale	Factor	Omega	AVE	Factor					
				1	2	3	4	5	6
CF	1. Family	.82	.61	1	.74*	.54*			
	2. Teachers	.90	.55	.55	1	.63*			
	3. Peers	.89	.53	.29	.40	1			
SE	4. Affective	.90	.48				1	.68*	.27*
	5. Cognitive	.93	.52				.46	1	.41*
	6. Behavioral	.86	.51				.07	.17	1

Note. Correlation between factors is shown above de diagonal and squared correlation is shown under de diagonal. CF = Contextual Factors, SE = School Engagement.
* $p < .05$.

Table 5
McDonald Omega Coefficient, Average Variance Extracted and squared correlation between factors for secondary school level

Scale	Factor	Omega	AVE	Factor					
				1	2	3	4	5	6
CF	1. Family	.82	.60	1	.72*	.53*			
	2. Teachers	.93	.62	.52	1	.62*			
	3. Peers	.92	.63	.28	.38	1			
SE	4. Affective	.91	.50				1	.63*	.04
	5. Cognitive	.93	.51				.40	1	.27*
	6. Behavioral	.89	.57				.00	.07	1

Note. Correlation between factors is shown above de diagonal and squared correlation is shown under de diagonal. CF = Contextual Factors, SE = School Engagement.
* $p < .05$.

Table 6
Measurement invariance of Contextual Factors scale by school level

Model	χ^2	*df*	*p*	D_χ^2	D_*df*	RMSEA	CFI	D_CFI	TLI
0 Configural (correlacted factors)	1148.388	264	.000	–	–	.085	.937	–	.927
1 Metric (loadings fixed)	807.842	282	.000	49.951	18	.063	.963	.026	.959
2 Scalar (loadings and thresholds fixed)	868.701	330	.000	82.782	48	.059	.962	-.001	.965

Table 7
Measurement invariance of School Engagement scale by school level

Model	χ^2	*df*	*p*	D_χ^2	D_*df*	RMSEA	CFI	D_CFI	TLI
0 Configural (correlacted factors)	1611.748	694	.000	–	–	.054	.927	–	.921
1 Metric (loadings fixed)	1533.786	722	.000	56.326	28	.049	.936	.009	.933
2 Scalar (loadings and thresholds fixed)	1795.117	806	.000	287.038	84	.051	.922	-.014	.927

factors, which constitutes evidence in favour of discriminant validity.

As shown in Table 6, scalar invariance of the CF scale by school level is achieved, allowing the CF scale to be used in the structural invariance analysis of relationships (of latent variables). As shown in Table 7, metric invariance of the SE scale by school level is achieved, allowing the SE scale to be used in the structural invariance analysis of relationships (of latent variables).

We found differences in the effects that are statistically significant for elementary school students (Figure 1) and middle school students (Figure 2).

The second objective of this study was to analyze whether there are variations in the relationship between contextual factors and school engagement depending on whether students are in primary or secondary education. As can be shown in both figures, for both primary (Figure 1) and secondary (Figure 2) students, all the contextual factors have a statistically significant effect on at least one dimension of school engagement. In the case of primary school students, *family support* has a positive and moderate effect on *cognitive school engagement* ($\gamma = .372$, $p = .001$), *teacher support* has a positive and moderate effect on *behavioral school engagement* ($\gamma = .378$, $p = .004$), and *peer support* has a positive and small effect on *affective school engagement* ($\gamma = .127$, $p = .027$).

For secondary school students, *family support* has a positive but small effect on *cognitive school engagement* ($\gamma = .168$, $p = .031$). In contrast to primary school students, *teacher support* does not have a statistically significant effect on *behavioral school engagement*, but it does have a positive and small effect on *affective school engagement* ($\gamma = .220$, $p = .005$) and *cognitive school engagement* ($\gamma = .214$, $p = .011$). Meanwhile, similarly to primary school students, *peer support* has a positive and small effect on *affec-*

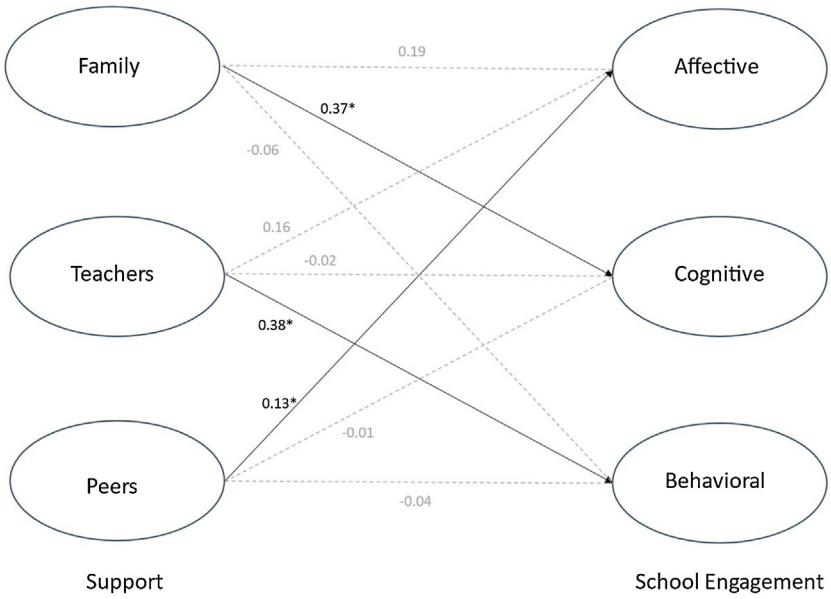

Figure 1. Path diagram of the model with the effect of FC on CE in primary school students. *Note.* Solid line = significant results; dashed line = non-significant results.

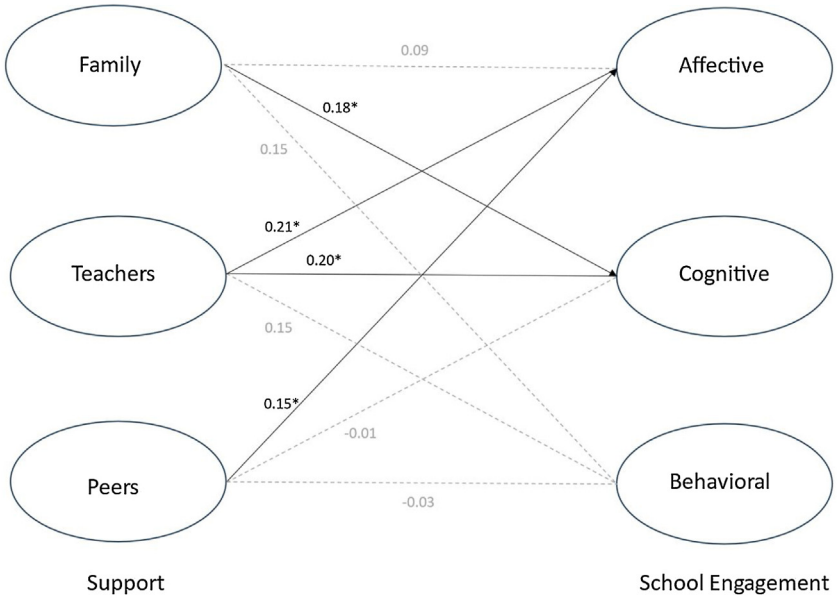

Figure 2. Path diagram of the model with the effect of FC on CE in secondary school students.
Note. Solid line = significant results; dashed line = non-significant results.

*tive school engagemen*t in secondary school students ($\gamma = .142$, $p = .015$).

Discussion

The results of the present research present empirical support for the importance of the relationships that students establish in their most immediate contexts of development, such as family, teachers, and peers for the establishment of engagement to their studies. As hypothesized in H1, the results indicate that family, teacher, and peer support have significant positive effects on different components of school engagement, supporting the idea that all three contexts are influential. Therefore, our results extend the empirical support established by previous research (Ansong et al., 2017; Martins et al., 2022; Miranda-Zapata et al., 2018; Miranda-Zapata et al., 2021; Navarro et al., 2021; Olana & Tefera, 2022), by showing that developmental contexts are not only concurrently relevant but also allow predicting from one course to another the levels of different components of school engagement.

Regarding H2, the results distinct patterns in how contextual support influences school engagement across educational levels. Starting with the family context, the results show how receiving family support positively predicted cognitive engagement in the following school grade for both primary and secondary school students, a result consistent with previous literature (Miranda-Zapata et al., 2018). This result is consistent with previous literature, revealing that the degree of parental involvement is a critical element in students' academic achievement (Lara & Saracostti, 2019). However, the strategies highlighted generally focus on indicators of cognitive engagement or students' willingness to help them develop motivational beliefs that drive them to become committed and invested in their learning and support them in the develop-

ment of cognitive and metacognitive strategies to self-regulate their learning (Pohl et al., 2020). Family support may not be directly related to affective or behavioral school engagement because it tends to focus more on general emotional well-being and academic expectations rather than on specific school-related behaviors or emotions (Wang & Eccles, 2012). Behavioral engagement often depends on real-time feedback and reinforcement, which are more effectively provided by teachers and peers in the school environment (Wentzel et al., 2010). Moreover, affective engagement, which includes feeling part of the school and having an emotional bond, tends to develop better through interactions with teachers and peers, who are part of the daily school experience (Wentzel, 2017).

Regarding teachers, the results are aligned with H1, as they indicate that teacher support in one grade predicts school engagement in the subsequent grade at both educational levels, but the type of school engagement predicted varies by educational level (H2). Specifically, teacher support predicts affective and cognitive engagement in secondary school, while it predicts behavioral engagement in primary school. In elementary school, teacher support has a significant impact on behavioral engagement, as it focuses on establishing clear rules, providing structure, and promoting active participation in class (Archambault & Dupéré, 2017). At this age, children tend to respond better to consistent guidance and clear expectations, which foster the development of appropriate behavioral habits within the school context. On the other hand, in secondary school, students tend to seek greater emotional connection and academic support from their teachers, which affects both their affective and cognitive engagement (Archambault et al., 2022). During adolescence, teacher support is crucial for fostering a sense of belonging and motivation to learn—key elements for affective and cognitive engagement. At this stage, students need meaningful interactions that reinforce their interest and help them face academic challenges effectively. This result is consistent with previous literature, which indicated that the most notable association between teacher support and the components of school engagement arose precisely in the case of affective engagement, especially in secondary students (Fernández-Lasarte et al., 2019; Miranda-Zapata et al., 2018). Strong and responsive relationships between teachers and students are essential for students to feel that they belong in their school (Williford & Pianta, 2020). Therefore, our findings, supported by consistency with previous literature, suggest the need to foster positive relationships between students and teachers.

These differences may help explain the varying relationships documented in previous studies regarding the influence of teachers on school engagement at different educational stages. When the different components of school engagement are not distinguished, it is generally observed that the impact of teacher support tends to decrease in middle school compared to elementary school. This trend could be linked to the developmental changes adolescents experience, as they seek greater independence from adults and place higher value on peer relationships. However, a meta-analysis by Roorda et al. (2017) concluded that the association between teacher support and school engagement is stronger in middle school than in elementary school, noting as a limitation the inability to differentiate between the components of school engagement. The need to separate these components for clearer results was emphasized.

Finally, about the support received by peers, the results show how receiving support from this context one grade predicted affective school engagement in the following grade in both school levels, consistent with previous research results (Estell & Perdue, 2013; Liu et al., 2023; Miranda-Zapata et al., 2018). The limited relationship between peer support and school engagement, both cognitive and behavioral, can be attributed to the nature of peer support, which is primarily emotional and social rather than academic. Peer support often fosters emotional well-being and a sense of belonging, which, while important, does not necessarily drive the cognitive investment or behavioral regulation needed for academic success (Wentzel, 2017). Although emotional support from peers helps students feel connected, it often lacks the necessary structure to effectively promote academic behaviors.

In contrast, support from teachers and family typically includes structured guidance, clear academic expectations, and explicit reinforcement, which directly fosters cognitive effort and sustained behavioral engagement (Wentzel et al., 2010). Teachers and parents tend to set goals and provide consistent support, which enhances academic outcomes, while peer support focuses more on emotional aspects. As individuals mature, they often prioritize autonomy and social acceptance, which can reduce the effectiveness of peer support in promoting academic behaviors. This focus on autonomy and peer dynamics can shift attention away from structured academic goals to maintaining social relationships (Ryan & Shin, 2018).

Altogether, the findings provide support for both H1 and H2, reaffirming the need to intervene to promote positive relationships between the most important contexts in which students develop, given the importance they have for the engagement they acquire to their education. At the same time, these research results contribute to the progress in school engagement studies, providing clarity in some key aspects highlighted as problems in previous literature. Finally, the results of this research contribute to identifying and guiding the contextual factors and the dimensions of school engagement in which to intervene, depending on the educational level (primary and secondary), facilitating timely and evidence-based educational decisions and actions. This study offers some valuable insights on how to boost student engagement by leveraging the support from families, teachers, and peers. First off, schools should really consider creating programs that bring together families, teachers, and students. By fostering strong relationships among these groups, we can enhance students' engagement on multiple levels. Teachers also play a crucial role. It is important to invest in training that helps them build positive, supportive relationships with their students. When teachers are equipped with the right tools and strategies, they can significantly improve the classroom atmosphere, making it more engaging for everyone. Additionally, introducing peer mentoring programs can be a great way to encourage positive interactions among students. Lastly, interventions need to be tailored to fit the specific needs of students at different developmental stages. Younger students might benefit more from structured behavioral support, while older students might need more focus on emotional connections and fostering their independence (Archambault et al., 2022). Involving families in school activities and keeping them in the loop can also create a more supportive environment that complements what teachers and peers provide. Overall, by recognizing the unique roles that family, teacher, and peer support play, we can create a more nurturing educational environment that helps students thrive.

Limitations

This study considers social support from various contexts without distinguishing between its different forms, such as emotional, informational, appraisal, and instrumental support (Malecki & Demaray, 2003). Future research should focus on analyzing these distinct types of social support across different contexts, as evidence suggests that the impact of these forms of support may vary depending on the source and type. Only one study was identified that examines the direct predictive relationship between the three main types of support (material, emotional, and informational) from various sources (family, friends, and teachers) and school engagement dimensions (cognitive, affective, and behavioral), and it was cross-sectional in nature (Izar-de-la-Fuente et al., 2023).

The findings from this study indicated that emotional support has greater predictive power across more dimensions of engagement compared to material and informational support.

Another limitation of this research is the impact of the pandemic and post-pandemic context of COVID-19, in which the study was conducted. Studies have shown that the pandemic has significantly affected students' social interactions and engagement levels (Domina et al., 2021). The fact that support from family, teachers, and peers did not predict certain types of school engagement may have been influenced by these disruptions, highlighting the need for further studies under more stable conditions to better understand the dynamics of social support and engagement.

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Laura Lara: conceptualization, formal analysis, investigation, methodology, validation, writing – original draft, writing – review & editing. *Edgardo Miranda-Zapata*: data curation, formal analysis, investigation, methodology, writing – original draft, writing – review & editing. *Mahia Saracostti*: conceptualization, funding acquisition, investigation, project administration, resources, supervision, writing – original draft. *Ximena de-Toro*: conceptualization, investigation, writing – original draft.

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